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ABSTRACT

These four papers are from a symposium on integrating learning and performance. "Identifying the Skill Requirements and Performance Needs of Small Manufacturers" (Julie A. Furst-Bowe) reports a survey to identify needs of small manufacturers in northwestern Wisconsin and to determine whether a university-based performance improvement center would assist them in meeting those needs. "The Relationship of Learning and Performance Improvement at Different System Levels" (Richard J. Torraco) examines learning and performance improvement as separate constructs and as complementary elements in organization systems. It uses a four-level systems model (individual, function, process, mission) to examine changes in the relationship between learning and performance improvement at different levels of the model. "Historical Antecedents Shaping the Terms of Performance and Learning and Their Relationship in Human Resource Development (HRD): An Exploratory Study" (John A. Henschke) explores whether HRD's key ingredient is performance or learning. It investigates how the meanings evolved historically and are interrelated. The study finds that the two distinct terms together and their relationship within the HRD context are key to HRD. "Developing Managerial Competence: Does It Improve Performance?" (Jonathan Winterton, Ruth Winterton) reports a United Kingdom study that found management development improved performance at individual and business levels and that development was more effective when linked to organizational strategy and based on the Management Charter Initiative occupational standards for managers. (YLB)

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Richard J. Torraco, University of Nebraska

20 - 3 Historical Antecedents Shaping the Terms of Performance and Learning and their Relationship in Human Resource Development: An Exploratory Study

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20 - 4 Developing Managerial Competence: Does it Improve Performance?

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Identifying the Skill Requirements and Performance Needs of Small Manufacturers

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Little is known about the employee skill requirements and performance improvement needs of small manufacturers in Northwestern Wisconsin. A survey was conducted to provide information on the needs of these manufacturers and to determine if a university-based performance improvement center would be of assistance to these companies in meeting the identified needs. The results of the survey are summarized and discussed in this manuscript. Conclusions are drawn, and recommendations for research and practice are provided.

Keywords: Performance Improvement, Performance Needs, Skill Requirements

Throughout the past two decades, numerous changes have occurred in manufacturing technology and production processes. In many companies, these changes have forced workers to obtain higher skill levels. According to a national survey, manufacturing employees now require greater skills in computer use, teamwork, decision making, problem solving and systems thinking to perform in the current work environment (Bassi, Cheney & Van Buren, 1997). This increased emphasis on technology, teamwork and knowledge management is expected to continue into the next century (Bassi, Cheney & Van Buren, 1997).

In many parts of the country, finding skilled workers for the manufacturing sector is extremely difficult, and providing employees with the skills they need can be costly to employers. In 1998, approximately 17 million production workers received an average of 30 hours of training, costing employers an estimated 19 billion dollars (Industry Report, 1998). Most of this funding was used to pay the wages of internal trainers or human resource development professionals. Technical colleges, community colleges and universities may also provide education and training to employees. Partnerships between manufacturers and educational institutions are becoming increasingly popular. In a recent survey by the Wisconsin Manufacturers and Commerce association, the technical college system was listed as the most important external resource for in-state employers and 24 percent of the respondents relied on four-year universities.

In Northwestern Wisconsin, where only 10 percent of the 371 manufacturers have more than 100 employees, few companies have internal training or human resource development departments (Franklin, 1998). In rural areas such as this, it would be logical for companies to utilize the services of the local technical colleges and university campuses to provide education and training for employees. However, highly skilled employees are just one component of performance. A comprehensive performance improvement system includes three levels of performance, individual, process and organizational, each with its own measurements and variables (Swanson, 1995).

In many small companies, owners and managers are busy maintaining their operations in a very competitive economy. They may lack insight as to how to implement a systematic approach to performance improvement that would encompass all levels and advance the organization beyond its current position. A university-based performance improvement center, led by faculty and staff with experience and expertise in performance improvement and human resource development, could assist small manufacturers in understanding performance and designing and implementing performance improvement initiatives. Currently, such centers are in existence in several universities with well-established academic programs in performance improvement and human resource development.

Research Questions

Little is known about the employee skill requirements and performance improvement needs of small manufacturers in Northwestern Wisconsin. This study sought to provide information on the following questions:

1. What are the employee skill areas that are perceived to have importance by small manufacturers?
2. What are the employee skill areas that are perceived to be in need of improvement by small manufacturers?

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3. What types of performance improvement initiatives are currently taking place in small manufacturing companies?
4. Is there a need for a university-based center that would assist small manufacturers in improving performance at the individual, process and organizational levels?

Methodology

Following a review of the existing research in this area, a questionnaire was developed and initially reviewed by a panel of faculty and staff members with expertise in performance improvement. The questionnaire contained demographic items such as size of company and job title of respondent. The main body of the questionnaire was divided into two sections. One section required respondents to rate various types of supervisory and employee skills as to their level of importance and the level of improvement desired. Skill lists were adapted from the *National Skill Standards for Advanced High Performance Manufacturing*, standards that were developed during a project that was commissioned by the U.S. Department of Education in 1997. In the second section, respondents were asked to describe current performance improvement initiatives in their organization. This section was designed in an open-ended format. The respondents could list and describe any current practice in their organization that was implemented to improve performance at the individual, process or organizational level. A final draft of the questionnaire was reviewed by small group of trainers and human resource directors in manufacturing companies.

A cover letter was developed and was then mailed with the questionnaire to a random sample of 200 small (fewer than 500 employees) manufacturers in the fall of 1997. Companies were randomly selected from a database maintained by the Northwest Wisconsin Manufacturing Outreach Center (NWMOC). Mailing labels and cover letters were addressed to the owners or presidents of the companies. By November 1997, following the initial mailing and a follow-up mailing, 49 companies, or 24.5 percent of the manufacturers, had responded to the questionnaire.

The data were analyzed by a staff member in the Technology and Information Services unit at the University of Wisconsin-Stout. Using SPSS-X software, frequencies and percentages were calculated for each item included on the survey. T-tests were conducted to determine if there were significance differences in the mean ratings of the two skill groups in importance or in need for improvement. The responses to the open-ended questions were summarized and categorized by the researcher.

There were limitations associated with this methodology. The population was limited to small manufacturers in Northwestern Wisconsin who were included in the NWMOC database. This is a largely rural area with a very homogeneous population and few cities that have a population more than 10,000. Therefore, the results may not be generalizable to manufacturers located in other parts of the state or other areas of the country. The 24.5 percent response rate also makes it difficult to generalize the results of the study. However, it was thought that additional follow-up mailings would do little to improve the response rate. Although the survey was targeted toward small companies, several of the respondents wrote unsolicited comments on their surveys such as "although I answered the questions, I believe our company is too small to do much in this area" or "with only 30 employees, most of this doesn't seem to apply to us." It was hypothesized that many of the companies did not respond to the questionnaire because they held similar beliefs.

Results and Discussion

In this section, the responses to each of the questionnaire items will be presented and discussed, beginning with the two demographic items: job title of respondent and size of company. Nearly half of the respondents were company presidents (47 percent). Other job titles of respondents included owners (14 percent); general, plant or operations managers (22 percent); vice presidents (1 percent); or other/multiple titles (16 percent). Many of the those in the "other" category held multiple titles, such as President/General Manager. The majority of respondents were from very small companies with fewer than 100 employees (84 percent). The remainder of the respondents were from companies with 100 to 250 employees (12 percent) or companies with 251 to 500 employees (4 percent).

Respondents were asked to rate the importance of 24 skills (12 supervisory/managerial skills and 12 employee skills) on a scale of 1 to 4 according to their perceived importance and the perceived need for improvement in each skill area (1 = little importance or little need for improvement and 4 = extremely important or great need for improvement). Table 1 presents the results of the supervisory/managerial skill ratings:

Table 1

Supervisory/Managerial Skills Ranked by Perceived Importance (N = 49)

Skill Area	Importance	Need for Improvement
Orienting new employees	3.36	1.92
Motivating employees	3.14	2.21
Appraising employee performance	3.12	2.23
Delegating responsibility	3.05	2.14
Solving problems	3.04	2.19
Managing operations	3.02	2.22
Providing feedback	3.00	2.24
Managing time	2.93	2.34
Managing diversity	2.83	1.37
Resolving conflicts	2.83	2.00
Managing projects	2.70	1.89
Training employees	2.48	2.08
	Mean = 2.70	Mean = 2.07

All of the supervisory/managerial skills were rated at least "somewhat" important by the respondents (2.0 or higher), and more than half of the skills (58 percent) were rated "very important" (3.0 or higher). Orientation of new employees receiving the highest importance rating (3.36) while training employees received the lowest importance rating (2.48.). Respondents indicated there was need for "little" to "some" improvement in all of the skill areas, with little variation across categories. There were similar patterns in the ratings of the importance and need for improvement in the 12 employee skills (see Table 2).

Table 2

Employee Skills Ranked by Perceived Importance (N = 49)

Skills Area	Importance	Need for Improvement
Working as part of a team	3.19	2.19
Making ethical decisions	3.09	1.70
Listening	3.07	2.18
Setting goals	2.95	2.30
Understanding quality	2.92	2.24
Writing	2.69	2.00
Managing stress	2.66	2.32
Using computer technology	2.62	2.00
Reading	2.50	1.66
Serving customers	2.40	2.22
Developing a career plan	2.07	1.65
Understanding of systems	1.88	1.88
	Mean = 2.67	Mean = 2.03

All but one of the employee skills were rated at least "somewhat" important by the respondents (2.0 or higher), yet only three of the skills (25 percent) were rated "very important" (3.0 or higher). Again, respondents indicated there was at least a "slight" need for improvement in all of the skill areas, with little variation across

categories. There were no significant differences in the mean ratings of the two skill groups, supervisory/managerial and employee, in importance or in need for improvement.

Thus, the respondents of this study were consistent with the current literature and with state and national research in this area as they rated 23 or the 24 skills area somewhat to very important for their employees. However, in contrast to the literature and national reports of low-skill employees unable to cope in today's high-tech manufacturing environments, the respondents in this study reported relatively little need for improvement in the skills of their employees. None of the 24 skills areas received a rating of 2.5 or higher indicating that there were no perceived needs for great improvement in any of the skill areas.

Approximately one-third of the respondents (32.7%) indicated they had implemented one or more performance improvement initiatives. Respondents were asked to describe these interventions in their own words. The responses include interventions directed at the individual, process and organizational levels and can be broadly categorized into six areas: strategic planning, physical infrastructure, quality improvement, training and development, individual performance management and other types of initiatives. Respondents could list multiple interventions (see Table 3).

Table 3

Performance Improvement Initiatives as Identified by Respondents

Organizational Level
Strategic planning
Establishing business objectives
Organizational goal setting by managers (2 companies)
New addition to facility - increase total space
Improvements in plant layout (3 companies)
Implementation of new computer system (2 companies)
Process Level
Continuous quality improvement program
Process improvement
Compliance with ISO Quality Standards (2 companies)
Quality control program
Standardized manufacturing criteria
Work flow improvements
Problem solving teams
Value-added manufacturing
Individual Level
Supervisory skills training program
Safety training (2 companies)
Training courses and seminars (3 companies)
Mentoring program
On-the-job training
Pay for performance
Performance evaluations (2 companies)
Annual performance agreements
Alcohol/drug testing
Other
Employee suggestion program, "Job Boss" Program, "5 Pillars of the Visual Workplace"

Although the 16 companies that considered themselves to have implemented performance improvement initiatives described a total of 35 activities, this list should not be considered an all-inclusive description of the initiatives that are occurring in these companies. It appears likely that individual perceptions of that could be considered a

"performance improvement initiative" varied widely. For example, it is widely accepted that on-the-job training (OJT) is a standard practice among small manufacturers although only one respondent included OJT in his response (Barron, 1997). The same observation could be made regarding safety training, performance evaluations and quality control processes. Finally, although only one-third of the respondents listed current performance improvement initiatives, more than half (51 percent) indicated they would consider using assistance from a local university in meeting their performance improvement needs.

Conclusions

Several conclusions may be drawn from the data that were collected in this study. The respondents of this study, primarily presidents and owners of small companies in Northwestern Wisconsin, indicated that the skills needed for supervisors and employees to be effective in the current manufacturing environment are somewhat important to very important for employees in their own organizations. Unlike employers in other parts of the state or other states in the country, there does not appear to be a shortage of needed skills or a perceived need for major improvement in any of the skill areas included in the survey given their current performance requirements.

However, the performance requirements for today's workplace can often be separated into two categories (Swanson, 1995). One category of skills deals with maintaining the existing organization. The second category of skills deals with improving the organization. It may be that employers are content with existing skill levels because current skill levels are adequate to maintain the existing company. In contrast, companies with aggressive performance improvement programs may find that employee skills need continual upgrading to deal with advances in systems and processes or to create new methods and products.

Two thirds of the respondents indicated that they did not have current performance improvement initiatives in place. Of the respondents who reported performance improvement initiatives, most provided only one or two examples of largely unrelated types of activities. There was no evidence of a systematic performance improvement program that included initiatives at the organizational, process and individual level at any of the responding companies. Thus it may be concluded that the respondents had a limited understanding of performance improvement and how performance improvement initiatives may be used strategically in their companies to improve productivity, quality or other areas.

Finally, more than half of the respondents indicated that they would consider using assistance provided by a local university to improve performance in their organizations. However, given the apparent match between employee skills and current performance requirements and the limited knowledge of performance improvement processes among the respondents, traditional approaches offered by technical colleges and universities, such as offering a series of employee training seminars, may be not be the most effective method to provide services to these organizations. Based on the data collected in this study, customized services, beginning with performance needs assessments and analyses, would appear to be a more effective approach.

Contribution to New Knowledge in HRD

Unlike large companies that often have resources for internal human resource development departments and external performance consultants, small manufacturers may have more limited knowledge and restricted access to individuals with formal expertise in performance improvement. Although the respondents, as presidents, owners and managers of companies, probably discuss performance issues on a regular basis, it is clear from the results that they share no common definition of the concept and no methodological approaches to improving performance in their organizations. Performance remains a mystery or even a threat to many individuals when they are asked to think about, explain, substantiate or improve performance in their organizations (Swanson, 1998).

Therefore, university-based centers that can assist small manufacturers with these issues may be providing valuable services, provided the organization is sincerely interested in initiating change. University consultants can best help small manufacturers by first facilitating strategic planning and challenging manufacturers to think systematically about improving performance before suggesting a number of interventions (Thompson, 1997). When the relationship has been established and trust has been built, the consultant may recommend a performance need analysis and, based on the results of the analysis, design appropriate interventions, including those related to training and human resource development. Continued assistance may be needed during the implementation and evaluation of interventions as small mangers may lack the knowledge and sophistication needed to effectively support the process (Brauchle & Wright, 1998).

The process described above, analysis, design, implementation and evaluation, has been used successfully with many organizations, both large and small. However, it is not a "one size fits all" approach. Many of the respondents clearly believed that their organization was "too small" to benefit from performance improvement theory or techniques, or they thought that there was little need for improvement in the skills of their employees. Research has proven that organizational design factors, including the size of the organization, may affect the success of performance improvement initiatives (Torraco, 1998). It may be that current models need to be adapted, or new models created, for very small companies.

Although respondents in this study saw relatively little need for improvement in the skills of their employees, probing questions from a skilled consultant may determine if the organization is operating at a "maintenance level" and if the performance could be enhanced through changes to the system. Through careful planning and analysis, employers may realize that skill levels they once believed adequate are no longer acceptable if they are to move beyond the maintenance level and require employees to become innovators and provide them with opportunities to improve their own individual skills, processes and work environment.

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The Relationship of Learning and Performance Improvement at Different System Levels

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The importance of learning to organizational effectiveness is no longer questioned. Research in the last decade has identified the central role of learning for enhancing individual development, team effectiveness, leadership, innovation, and competitive advantage. However, this acknowledgement of learning's importance has been accompanied by the lack of conceptual clarity when learning, change, innovation, and performance, all desirable states and covariants of each other, are necessarily studied together. Because learning and performance strongly influence each other, we are often left confused by which is the phenomenon of interest. This confusion is compounded when levels of analysis are considered. This paper examines learning and performance improvement, first as separate constructs, then, as complimentary elements in organization systems. Using a four-level systems model, changes in the relationship between learning and performance improvement are examined at different levels of the model.

Keywords: Organizational Learning, Performance Improvement, Systems Model

Several models exist to aid our understanding of systems and, in particular, the dynamics of organizations. Rashford and Coghlan (1994) frame strategies for change within a model with four levels—individual, team, interdepartmental, and organizational. Nadler, Gerstein, and Shaw (1992) provide a framework for organizational change with three levels—individual, unit/group, and system. Rummler and Brache (1995) argue that system-wide performance improvement requires attention to performance variables at three levels—individual, process, and organization. Each of these models specify an individual and an organizational level. However, inconsistency at the intermediate level(s) often results in confusion. What exists between the individual and organizational levels? Is this level best represented by *group*, *process*, or one or more other terms?

Holton (1999) proposed a four-level systems model that offers an important, new dimension not present in other models that appears to resolve this inconsistency and confusion. Holton's model, created as a framework for performance improvement research, is composed of four levels—individual, critical performance sub-system, process, and organization. This model makes an important distinction between a *process*—a structural component common to all systems, and what Holton calls a *critical performance sub-system*—a concept that can be used to designate a work group, department, center, division, or other structural unit specific to the system. This paper adopts Holton's model, with a minor modification described later in the paper, as the systems framework for examining the relationship between learning and performance improvement.

Individual level. The individual level is important because of the centrality of the job in studies of work and occupations where the individual is the job incumbent. Regardless of the model one uses, any human system must acknowledge the individual as its basic building block. In the following sections, learning and performance improvement are discussed as separate constructs. Then, the relationship between learning and performance improvement is examined to determine the conditions under which a closer relationship between these two phenomena might exist.

Learning at the individual level. Experiential learning occurs through reflection about concrete experience in which a pre-existing mental representation of a situation is reconciled with current experience (Kolb, 1984; Schon, 1983). The learner is able to construct new knowledge on the basis of existing knowledge. In novel situations for which no prior experience exists, the learner's burden to construct understanding increases. The learner must be resourceful in using materials, local conditions, and social circumstances to construct a conception of the new situation that is intelligible to the learner.

What is learned, both with and without prior experience, is intimately connected to the conditions in which it is learned. Even in familiar situations for which mental representations exist, learners will first try to deploy useful aspects of the task and their understanding of the context in order to limit the representational and computational load. This aspect of cognition was demonstrated by Scribner (1984) as "mental effort saving," in which dairy workers devised computational short cuts learned from practical experience. In developing a theory of

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situated learning, Brown, Collins, and Duguid, (1989) acknowledged that, when a situated approach does not facilitate learning, people may, step by step, fall back on abstract algorithms. However, the authors stated, "we still need to understand the initial impulse to try a situated approach. And if this approach indeed succeeds, reflecting on and justifying that success is a productive learning experience" (p. 11). If one accepts a view of learning consistent with the theory of situated cognition, then the following line of reasoning defines the learning experience.

- Context is crucial to learning. What is learned cannot be separated from the context in which it is learned.
- Context can include experience, but learning can proceed without direct experience.
- To compensate for lack of experience and as a supplement to the context of learning, the learner relies on heuristics and abstract algorithms as a way of forming a mental representation of what is learned.

When people lack experience with a situation or are introduced to a new concept, providing them with a model or description of the new situation is a useful catalyst for forming mental representations of what is learned. While inexperienced people may accept such a model, they will try to integrate it with new activities and perceptions, and any past experiences that may be related. The model will become part of the present context for learning, in which the learner's activity and perceptions precede mental representation.

Performance improvement at the individual level. Without engaging in a futile effort to pin down a concept that will likely always demand multiple interpretations, performance improvement is characterized in a particular way to serve as a conceptual anchor for the rest of this paper. In every organization the concrete determinants of performance are reflected in people, their ideas, and the material resources through which their ideas reach the marketplace. Performance improvement cannot be fully understood without specifying its determinants, accounting for the sophisticated processes through which performance is expressed, and making some judgment about whether or not performance has, in fact, improved. Performance improvement can only be manifest through outputs, and change in outputs can only be assessed through some form of measurement. Thus, performance is a systems concept that can be operationalized in any system as one sets out to demonstrate whether or not it has improved. The dynamic nature of performance improvement allows empirical inquiry into its determinants, dynamics, and consequences. Simply stated, performance improvement can be demonstrated through research.

Learning—performance improvement relationship. Learning can occur without performance improvement. Even in the workplace where behavior is expected to be goal-directed, most learning is informal and occurs through *noncanonical practices*—the improvisations and short cuts learned from actual experience (Brown and Duguid, 1991). People routinely share stories and work experiences with each other for a variety of reasons that include learning. An insight into one's work, whether it arises from formal or informal learning, may never be translated into a demonstrable improvement in performance. The value of workplace learning is not measured exclusively in the currency of performance outcomes.

Conversely, individual performance can be improved without learning. For example, take the situation of an employee who needs his/her job, and, for any number of reasons, is unlikely to leave it for another job. The supervisor requires this employee to spend more time on a particular task. Under the threat of punishment or dismissal by the supervisor, the employee does so. More work is accomplished and, subsequently, the employee's task-related performance improves. If "learning" has occurred at all, the employee has learned only to comply with the demands of the supervisor. This is not learning as it has been defined here.

Thus, learning and performance improvement are independent constructs; learning occurs without performance improvement and performance improvement occurs without learning. Moreover, there is no evidence that greater learning necessarily leads to better performance. However, features of the learning experience may predispose participants to better performance. Research that promises to strengthen this relationship examines the development of a climate for the transfer of learning to performance (Rouiller and Goldstein, 1993; Holton, Bates, Seyler, and Carvalho, 1997). The relationship between learning and performance improvement at the individual level is summarized in Table 1 (see Table 1, *Learning and Performance Improvement at Different System Levels).*

Function level. These are work groups, teams, departments, functional areas, centers, institutes, divisions, or other structural units designated by the organization system. Whenever two or more individuals come together for a common purpose, the structural unit created is a *function*. A function is different than a process (the next level of the model to be discussed) because processes integrate the contributions of several functions (thus, the term *cross-functional process*), and functions usually contribute to more than one process. While acknowledging the variety of configurations at the function level, the term "group" will be used to designate this level for consistency.

Learning at the function level. Learning at the function level is conceptualized as a phenomenon that is consistent with Simon's observation that "all learning takes place inside individual human heads; an organization learns in only two ways: (a) by the learning of its members, or (b) by ingesting new members who have knowledge

the organization didn't previously have" (1991, p. 125). Learning is strongly influenced by context and occurs in ways that are unique to the individual. When we move to the function level, learning still occurs through individuals. Two or more people constituting a group are expected to be familiar with a common body of knowledge and the resources that are available to achieve the group's purpose. Members must also observe basic rules of group interaction. Presumably because all members of the group increase their learning about these common elements, we refer to this type of learning as "team learning" or, in larger systems, as "organizational learning." However, this is really individual learning of content that is common to other members of the group. Group learning occurs as individuals learn more about this content and about each other.

If learning only occurs "inside individual human heads," what characteristics distinguish individual learning from learning at the functional level? Individuals enter the group experience bringing with them the responsibility for continuing their learning related to the job or role they hold. However, what learning responsibilities are incurred by group members beyond what is already expected of the individual?

Research has identified two distinctions between individual learning and learning at the function level. First, each member of the group must know how his/her role or task fits into the group's overall purpose. This may involve the development of a *transactive memory system*, in which members simply know the locations rather than the details of common events and rely on one another to contribute the missing expertise (Wegner, Erber, and Raymond, 1991). An alternative suggested by Hutchins' (1991) work on distributed cognition, is that a senior practitioner, who has previously held the roles of subordinates, coordinates members' contributions and assures the proper amount of overlapping expertise. A second distinguishing feature of learning at this level is, to the extent that some knowledge resides exclusively in the group, members must learn from each other (Hackman, 1990; Katzenbach and Smith, 1993). Weick and Roberts (1993) have described the heedful comprehension that occurs among group members as they learn from each other as the development of "collective mind."

Performance improvement at the function level. Improving work performance at the function level is not simply a matter of applying the factors used to improve job performance to more than one person. Groups face challenges to achieving performance goals not encountered by individuals. A model of performance is presented next that requires the systematic consideration of five determinants of group performance.

- *Performance goal.* Performance in most businesses is driven by the need to deliver value to customers in ways that are better, faster, and cheaper (Kaplan and Norton, 1992).
- *Consequences.* The alignment of consequences across organizational levels remains a challenge for managers (Kerr, 1973). Corporate credos espousing customer service are frequently contradicted by employees rewarded for customer volume, not customer satisfaction.
- *Communication and feedback.* The moment we move from the individual level to the group level, communication becomes essential for performance improvement. Communication is the vehicle through which group members determine how their role or task fits into the group's overall purpose, and meets the needs of the larger system (Schein, 1990). Communication includes feedback on progress toward goal attainment, a crucial component of performance improvement. Research indicates that performance improvement may be impossible without it (Ilgen, Fisher and Taylor, 1979; Locke and Latham, 1990).
- *Materials and equipment.* Rarely can performance be improved without the use of materials and equipment (Deterline and Rosenberg, 1992). Information technology has recently had such a dominant role in improving the performance of organizations that we tend to take this technology for granted. Yet, we can't expect better products or more satisfied customers if employees lack the tools they need to accomplish these goals (Rummler and Brache, 1995).
- *Learning.* Learning is a crucial determinant of performance improvement. Individuals must know how their roles and tasks contribute to the group's overall purpose. To the extent that some knowledge resides exclusively in the group, members must also learn from each other.

Beyond acknowledging that performance cannot be improved in the absence of one or more of these determinants, no judgement can be made about the relative importance of the determinants to performance improvement. The centrality of a particular determinant is a function of the type of work performance to be improved. Performance in one situation may be enhanced primarily through information technology (materials and equipment). Performance in another situation may be improved as sales personnel gain insights into optimizing the match between customer needs and product capabilities (learning). Next, we examine the relationship of one factor, learning, to the other determinants of performance improvement to gain more insight into the relationship of learning and performance improvement.

Learning—performance improvement relationship. While learning is crucial to performance improvement, by itself, learning is not sufficient to improve performance. The following example, in which an organization introduces new computer-based technology to improve its most profitable product, illustrates this relationship between learning and performance improvement. The goal of the organization is to deliver value to the customers in ways that are better, faster, and cheaper. A small work group composed of a customer service representative, a product designer, and a production supervisor have come together to develop ways to integrate the new technology into their existing operations.

An immediate obstacle to this group's performance is the current system of rewards. For example, the customer service representative is compensated based on the number of customer orders processed, yet there is little incentive for concern about overall work quality. Similarly, the production supervisor's compensation reflects the number of units produced per work shift. The quality of the units produced is considered to be the responsibility of the design department from which production receives its work. These consequences are too easily interpreted as meaning, "quality is someone else's job, not mine!" Properly aligned *consequences* would include compensation for the customer service representative based on the percentage of repeat customers (reflecting the quality of prior work) and compensation for the production supervisor that reflects production quality, not just volume.

Feedback is especially important to this group because their goal requires true innovation—the new technology has never been used with existing operations. Because there is no precedent for what they are doing, the absence of feedback could result in poor progress or costly mistakes. *Communication* within the group is especially important because of the diversity of the expertise of each group member. Frequent communication partially compensates for their lack of overlapping skills. New technology *(materials and equipment)*, which allows greater production efficiency without sacrificing quality, is the catalyst of this performance improvement opportunity.

Learning occurs within the group as each individual learns more about the new technology and about how it is integrated in a cross-functional way. If the group's experience is characterized by continuous learning, then it is quite likely that the project will be successful. Ultimately, customers would receive a better product at a lower price in less time. The performance goals will be achieved.

In this example, performance is improved through the contribution of all five determinants, including learning. However, learning alone is not sufficient to improve performance. Learning alone cannot reduce production cycle time caused by slow, out-dated equipment. Most employees have learned about the importance of quality. Yet, they routinely behave in ways that maximize their rewards, often regardless of customer perceptions. Without a group performance goal that is also important to the rest of the organization, learning for other purposes (for examples, personal or group development) is too easily dismissed as peripheral.

Poor performance resulting in delays, low quality, and additional costs can be measured in almost every work environment. In these situations, initial measures can be compared with subsequent measures to determine if performance has improved. If so, as in the case described here, it is likely that learning has made a significant contribution to performance improvement. However, rarely does learning play an exclusive role; performance improvement at all levels of the system has multiple determinants, including learning. The relationship between learning and performance improvement at the function level is summarized in Table 1 (see Table 1, *Learning and Performance Improvement at Different System Levels).*

Process level. A process is a sequence of interrelated tasks, activities, and functions that produce a given output. A process typically integrates the contributions of several functions. Because a process spans significant portions of the system, it is likely to connect with the external environment.

Learning at the process level. At this level, two or more groups are needed to pool their expertise for purposes that cannot be achieved by a single group. However, learning at this level takes on an additional dimension—the integration of the expertise of several functional groups working together. For example, in a project involving three groups, group A needs to be familiar with the expertise and contributions expected of group B, which, in turn, needs to communicate with group C. Each group needs to know something about what the other groups are doing. Yet, this overlapping knowledge presents an additional challenge—the trade-off between diversity and commonality of knowledge across groups. How much overlapping knowledge should each group possess?

The risks assumed by cross-functional groups that have no overlapping knowledge are obvious—errors occur. Each group focuses on its own agenda while not developing the "peripheral vision" needed for the awareness of what other groups are doing. Numerous other accidents have resulted from the failure of groups to share their expertise and expectations (Perrow, 1984). On the other hand, too much overlap in the knowledge shared by groups creates redundancy that is costly. Too much commonality of knowledge may also hinder the innovation that arises from diversity of ideas. Common backgrounds can lead to low levels of attention and the absence of the diverse stimuli (Robinson and Stern, 1997) and motivation (Amabile, 1997) for innovation. Successful cross-functional groups develop methods to determine the proper balance between the diversity and commonality of knowledge.

Performance improvement at the process level. At the process level the success achieved by a particular group is no longer enough for performance improvement. Performance improvement is now dependent on the collective contributions of each group supporting the process. The key determinants of performance (performance goals, consequences, communication and feedback, materials and equipment, and learning) are still at work within each group. However, at the process level an additional requirement exists for performance improvement—that each group contributes its expertise to a broader outcome that cannot be achieved by any group alone.

The Manhattan Project, the interdisciplinary effort that produced the first atomic bomb, illustrates the necessity of bringing together the achievements of each group for the overall success of the project. Although physicists at the Los Alamos laboratory were rightfully credited with developing the nuclear fission technology for the atomic bomb, the performance of other groups was also vital to the success of the Manhattan Project. The group responsible for uranium and plutonium processing had to develop and deliver this material quickly to keep the project on schedule. In addition, political and military leaders had to develop a strategy for using the bomb that was politically acceptable. Each group had to achieve success in their own area of the project (designing the atomic device, providing enriched uranium, and developing a targeting strategy). While each of these accomplishments was an innovation in its own right, these outcomes had to be integrated for the overall success of the project. Success within each function was not sufficient; performance improvement at the process level requires the integration of performance enhancements across functional units.

Learning—performance improvement relationship. How much overlapping knowledge should groups possess? The challenge of distributing overlapping knowledge among functional groups can be reduced by reflecting on the learning—performance improvement relationship. Groups that come together for the first time, particularly for innovative purposes, likely have little overlapping knowledge. As they begin to work together toward a common purpose, each group gradually learns more about the expertise of the other groups. This occurs as they trade interim products of their knowledge, such as draft reports, blueprints, proposals, and other work that reflects the specialized expertise of each group. As each round of refinements is shared among the groups, their overlapping knowledge increases as it approaches the point of complete overlap—the state in which each group possesses all the knowledge of the other groups. Yet, at what point is this gradual increase in overlapping knowledge optimized? In most business contexts, the cost of increasing knowledge among groups to the point of complete overlap is not justified.

Regardless of cost, overlapping knowledge is neither necessary nor desirable in most situations. Instead, the learning of each group about domains beyond its specialty increases to the point at which a collective product that meets established performance criteria is produced. At this point, all the learning necessary for contributing to the project has taken place. While additional learning may be beneficial to a group or individual members, the ultimate recipient of the product, the customer, will likely not see the value of this additional learning. In fact, when the purpose of cross-functional collaboration is new product development, the time needed for additional learning beyond this point may delay goal achievement, such as the release of a new product in the marketplace. Performance criteria, then, can determine the optimum degree of overlap of cross-functional learning. The relationship between learning and performance improvement at the process level is summarized in Table 1 (see Table 1, *Learning and Performance Improvement at Different System Levels).*

Mission level. The top level of the systems model addresses the relationship of the system to its external environment. In proposing the four-level systems model, Holton (1999) states that "every purposefully organized system operates with a mission, either explicitly or implicitly, and the role of the mission is to reflect its relationship with its external environment" (p. 25). Business organizations use mission statements to capture the core relationship they have with customers, their industry, or society. A government organization may define its mission in terms of providing certain benefits to the community. Other systems that are organized around a common purpose include trade associations, professional groups, economic coalitions organized at the local, regional, national and international levels, non-profit groups organized for environmental and humanitarian purposes, and other groups. As these examples demonstrate, the concept of mission can encompass one or more organizations, and thus, is a more meaningful and universal term than "organization" for this level of the systems model.

Learning at the mission level. Learning at the mission level includes a strategic dimension not usually considered at lower levels. For example, take the mission common to all hospitals—providing high quality health care to those who need it. There are different kinds of hospitals, including large academic medical centers, smaller community hospitals, and hospitals that provide rehabilitation, mental health and other specialty services. Yet, all of these institutions are organized around the purpose of providing high quality health care. Health care cost containment—a challenge issued by insurance companies, government regulators, and employers—currently poses a threat to the viability of most hospitals. Like other organizations, each hospital operates according to its own strategic plan for meeting the needs of its constituents in cost-effective ways. A large medical center follows a

different health care delivery strategy than a community hospital, even though the two institutions may be located in the same region. Yet, the mission level adds a dimension that transcends how two or more hospitals operate in a given market. All hospitals must respond to a broader concern for cost containment. This concern shapes the strategy of each hospital, regardless of its size or services. At the mission level, each hospital must learn not only how to develop its own strategy for cost containment, but one that is consistent with other institutions and responsive to the concerns of insurers, regulators, and employers. In this sense, organizations across the hospital industry must learn together how to address this concern in ways that are consistent with their mission.

Performance improvement at the mission level. The same strategic perspective applies to performance improvement at the mission level. Efforts to improve performance must be integrated and span the boundaries of the system so that they can be recognized by customers or other external stakeholders. An example from the airline industry illustrates performance improvement at the mission level.

The perennial concern for air traffic safety underlies the industry-wide practice of sharing data on weather patterns, airports, aircraft, and other equipment and facilities. Industry level associations like the Air Traffic Association, Airline Pilots Association, and the Federal Aviation Administration regularly share information with all air carriers for the purpose of improving safety. This mission-level effort to improve performance transcends the strategic interests of a particular airline. Each airline has learned that only through industry-wide efforts to improve safety performance can claims be made that air travel is safer than highway travel in terms of accidents and deaths per passenger mile traveled. Thus, regardless of whether the system is defined as an organization or an industry, performance improvement at the mission-level must span the system to reach the external environment.

Learning—performance improvement relationship. A paradox is apparent in the learning–performance improvement relationship. Measurement is necessary to demonstrate performance improvement. As we have seen at each level of the system, learning is also necessary for performance improvement. Yet, the most meaningful learning often is not amenable to measurement (Kolb, 1984; Brown, Collins, and Duguid, 1989). It is even more difficult to measure the contribution of learning to performance improvement, especially at the mission level where, at a minimum, the performance of several processes must be integrated for systemic results. Thus, performance improvement requires both measurement and learning, yet the contribution of learning to performance improvement is rarely measurable.

This challenge is further complicated by the dynamic nature of performance measurement. Meyer and Gupta (1994) observed that the number of performance measures continues to grow. As performance measures change, often dramatically, they tend to be less correlated with one another. As organizations improve their capabilities for reaching performance goals, performance measures tend to lose their ability to discriminate good from bad performance. This triggers the creation of new performance measures different from and, therefore, poorly correlated with existing measures. Thus, a state of multiple, uncorrelated, and changing performance measures exists. In this environment, organizations must support the key determinants of performance, including learning, and attempt to achieve performance goals that appear to be moving targets.

Several studies have attempted to clarify the relationship between learning and performance at the mission level. Learning, although not explicitly measured in these studies, was at the core of the human resource practices examined by this research. Authors used measures of developmental practices that included formal job training and employee development (Kalleberg and Moody, 1994), team-based work systems and training for new and experienced employees (MacDuffie, 1995), transformational relationships between managers and employees (Cutcher-Gershenfeld, 1991), and quality improvement teams, employee training, and the linkage of performance with rewards (Huselid, 1995). In each study, learning, whether individual or collective, was not explicitly measured. Yet, learning was central to the achievement of mission-level performance goals. Learning was the basis for several of the human resource practices supporting Huselid's (1995) assertion "that human resource management practices can affect individual employee performance through their influence over employees' skills and motivation and through organizational structures that allow employees to improve how their jobs are performed" (p. 638). MacDuffie (1995) found support for the hypothesis that, "*bundles* of interrelated and internally consistent HR practices, rather than individual practices, are the appropriate unit of analysis for studying the link to performance because they create the multiple, mutually reinforcing conditions that support employee motivation and skill acquisition" [italics in original] (p. 198).

Thus, learning was embedded in larger systems of human resource practices that included work skills development, performance-based compensation, participatory decision making, team-based work design, and other human resource innovations. While the centrality of learning to performance improvement in each study was undeniable, learning's contribution was difficult, if not impossible, to isolate. The relationship between learning and performance improvement at the mission level is summarized in Table 1.

Several conclusions can be drawn from this analysis of learning and performance improvement.

1. Learning and performance improvement are independent concepts. Learning can occur without performance improvement; performance improvement can occur without learning.
2. The scope of learning increases as we ascend the model from the individual level to the mission level. The responsibilities for learning are cumulative—those at lower levels are carried to each higher level of the model. The cumulative nature of learning also enhances its role in performance improvement. That is, the role of learning in performance improvement also appears more prominent at higher levels of the model.
3. Performance criteria can help determine the scope and depth of learning needed to achieve system goals. This is especially important when the value of learning must be balanced against its costs.
4. While measurement is necessary to demonstrate that performance has improved, measurement is not necessary to demonstrate the value of learning. This presents a paradox—performance improvement requires both measurement and learning; yet, rarely is learning's contribution to performance improvement measurable.

Implications for Future Research

This study raises several issues that warrant further research. An unresolved issue is the role of experience in learning and performance improvement. The influence of experience on the learning process has been extensively studied (Kolb, 1984; Lave and Wenger, 1991; Schon, 1983). The role that experience plays in the development of expertise has also been demonstrated by Bereiter and Scardamalia (1993), who identified characteristics that distinguish the expert from the experienced non-expert. As studies of innovation seem to show, experience is also not a prerequisite for entrepreneurial performance (Amabile, 1997; Robinson and Stern, 1997). If so, how does the role of experience change as we move from learning to performance improvement? If both learning and performance improvement can proceed in the absence of experience, why has experience commanded so much attention from learning theorists?

Learning was described as an experiential process that is strongly influenced by context, and that occurs in ways that are unique to the individual. Performance improvement was described as a systemic phenomenon that is manifested through a change in outputs. A situation was described in which performance was improved without learning in which an employee, under pressure from a supervisor, improved performance by spending more time on a particular task. However, contrary to the point illustrated by this example, it is likely that performance cannot be improved without some form of learning. Research, drawing on richer descriptions of how performance improvement and learning occur, is needed to examine whether performance can ever be improved without learning.

The role of measurement in relating learning to performance improvement also warrants further research. This paper concludes that, while measurement is necessary to demonstrate performance improvement, the value of learning is not dependent on what can be measured. Previous studies have identified the importance of learning to the achievement of mission-level performance outcomes, yet the contribution of learning has been difficult, if not impossible, to isolate. Further research is needed to clarify when and how measurement should be used to relate learning to performance improvement.

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	Learning	Performance Improvement	Relationship of Learning to Performance Improvement
Mission	▪ Learning transcends organizational boundaries. ▪ Learning must balance needs that are both internal and external to the system.	▪ Performance improvement must be recognized by the external environment. ▪ Mission-level performance measures must be aligned with measures at lower levels of the system.	▪ The paradox—Performance improvement requires both measurement and learning. Yet, rarely is learning's contribution to performance improvement measurable.
Process	▪ Learning addresses the integration of expertise across functional units. ▪ The degree of learning overlap must be determined.	▪ Process-level performance improvement requires success within each functional unit and integration across functional units.	▪ Performance criteria can determine the optimum degree of overlap of cross-functional learning.
Function	▪ Groups learn as their members learn. ▪ Members must learn role/task integration. ▪ Members must learn to learn from each other.	Performance improvement is determined by five factors: ▪ Performance goal(s) ▪ Consequences ▪ Communication and feedback ▪ Materials and equipment ▪ Learning	▪ The five determinants must be addressed individually and collectively for performance improvement. ▪ Learning is necessary, though not sufficient, for performance improvement.
Individual	▪ Experiential learning ▪ Importance of context ▪ Heuristics compensate for lack of experience.	▪ Performance improvement is a systems concept. ▪ Performance improvement cannot be demonstrated without outputs and measurement.	▪ Learning can occur without performance improvement. ▪ Performance improvement can occur without learning. ▪ Attention to learning transfer can strengthen the learning—performance improvement relationship.

Table 1. Learning and Performance Improvement at Different System Levels

Historical Antecedents Shaping The Terms Of Performance And Learning And Their Relationship In Human Resource Development: An Exploratory Study

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This study explores the gap that exists in the Human Resources Development (HRD) Field regarding whether its key ingredient is either "performance" or "learning." It investigates through ancient and modern lexical, dictionary and common use sources how the meanings of these two and other related terms evolved historically and how their meanings are interpreted. The results indicate that the two distinct terms together and their relationship within the HRD context are key to HRD.

Keywords: Performance, Learning, Human Resource Development Key

Purpose of the Study

The purpose of this study is to address a gap that exists in the Human Resources Development (HRD) Field regarding its perceived key ingredient as being either performance or learning (Watkins & Marsick, 1995; Swanson, 1995). Focus will be placed on understanding how the meanings of these and some other key HRD terms have evolved historically, how their meanings are interpreted, and how they relate to each other. This study suggests that probing into some of the historical background of the terms "learning" and "performance," as well as some other related terms,which have similar meanings to these two, and their mutual relationships, could help to deepen understanding of the HRD Field as well as clarify the discussion and use of these terms in the HRD Literature.

Problem Statement and Theoretical Framework

Performance has become a "byword" in the lexicon of HRD. Performance has been hailed as the key ingredient to HRD (Swanson, 1995). Improved performance has also been hailed as being the purpose of HRD (Lynham & Swanson, 1997; Swanson & Arnold, 1997), and the outcome of HRD (Knowles, Holton & Swanson, 1998). The design of performance has been acclaimed as the means for HRD making copporate organizaational success happen (Taylor & Felton, 1993). Performance has also been included in various current HRD definitions (Swanson, 1995; Knowles, Holton & Swanson, 1998). Knowles, Holton & Swanson, (1998) define it as the organizational system outputs that have value to the customer in the form of productivity attributable to the orgaqnization, work process, and/or individual contributor level. It is the means to measure organizational goals which include rate of return, cycle time, and quality of output. It is further defined structurally (Swanson, 1995; Arnold & Swanson, 1996) as having: variables such as mission/goal, system design, capacity, motivation, and expertise; and levels such as organization, process, and individual. Ruona & Lyford-Nojuma (1997) support this structural definition of performance with references from thirty different research studies. Nevertheless, Lynham & Swanson (1997) do not indicate how performance is developed, nor how one becomes prepared for performance in HRD.

Watkins & Marsick (1995), on the other hand, make a strong argument for learning as the key ingredient in HRD. Although they do not mention the word "performance," they exspress a vision for HRD and its definition as the field of study and practice which is responsible for the fostering of a long term, work-related capacity at the individual, group and organizational levels. As such, it includes -- but is not limited to -- training, career development, and organizational development. Hatcher, Hinton and Swartz (1995) emphasize the importance of continuous learning in preparing people to go into and remain in the HRD Field. In making the case for learning being the key ingredient of HRD, Watkins & Marsick (1995) do not emphasize just individual learning. They propose that a unique niche for HRD that is distinctive is the concept of the learning organization -- one that brings together two major components: learning, and the workplace context in which learning occurs. Delors (1997) argues that one of the pillars of the heartbeat of the twenty-first century society is learning to do/perform a job of work. Belanger (1997) proposes that learning take place continuously not only on the individual level, but also on the istitutional/organizational level and the systemic level. Knowles (1989) expressed how he would like to be helped in his learning by a human resource developer in the twenty-first century. This certainly implies that lifelong

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learning is and will continue to be a central component of life and work. This has lead Watkins & Marsick (1995) to propose the learning organization as central to the HRD function. There are strong arguments on both sides of this discussion for the key ingredient in HRD to be performance as well as learning.

Research Questions

In order to understand the discussion more fully, the nature of the separation between learning and performance in HRD parlance, and to explore the possibility of closing the gap between the two terms (and other related terms), the following questions may be appropriate to further guide this study: how have the meanings of key HRD terms evolved historically? and, how are their meanings interpreted?

Methodology

An investigation was conducted into how the words "performance" and "learning" evolved historically in the HRD literature, especially in the Academy of Human Resource Development (AHRD) Research Conference Proceedings and related literature in the HRD Field. In addition, an inquiry was conducted into the words "performance," "learning," (and any other related terms such as doing, teach, guiding, instructing, leading, training, learning organization, hearkening, wisdom, and modeling), as defined by English language dictionaries (Webster, 1828; Russell et. al., 1939) , and the historic standard lexicons of the ancient Greek and Hebrew languages (Thayer, 1979, 1981; Brown et. al., 1979; Zodhiates, 1984, 1990). One of the reasons these two ancient languages were chosen is that Hebrew has remained virtually unchanged for more than twenty centuries, and the Greek (Koine) referred to is a translation from the ancient Hebrew. Another reason is that the author has language background in both Hebrew and Greek, and has interest in this kind of study. After the data obtained from the dictionaries and lexicons were analyzed, the data are presented and outlined in accordance with the definitions of the various words and their relationships (or lack of it) with the "performance" and "learning" terms and definitions within the Field of HRD.

Historical Background

Pace et. al. (1991) trace the history of HRD efforts through four eras: employee skillfulness--to 1800; employee efficiency--1800/1920; employee satisfaction--1920/1945; and, employee enhancemant--1945/present. Nadler & Nadler (1990) suggest that the history of HRD (under a variety of names) dates back to the dawn of recorded history when the first caveman took his son aside and taught him how to tie a sharpened piece of obsidian to a piece of straight wood to make a spear. However, it was not until the 1940s, that he thinks there was sufficient concern to produce written material directly related to the HRD Field. However, Houle (1992) discovered evidence that somewhat earlier, Peffer (1932) concluded that programs of the HRD sort in industry and commerce were the largest component of adult education at that time, and that Rowden (1937) assessed the educational work in trade associations for their own staffs and those of their member agencies. In addition, Henschke (1991) observed that prior to the 1940s, Lindeman (1938) laid the initial foundation for HRD professional competencey development. Furthermore, Nadler & Nadler (1990) provide a sketchy history of the emergence and development of HRD. They suggest that among the predecessor terms to HRD were training, vocational education, apprenticeship, sensitivity training, applied behavioral science, and organization development. The HRD term was first introduced to the American Society for Training and Development (ASTD) in Miami in 1969.

Since 1970, a definition of HRD has been in print. There are four presented here which find some acceptance in the Field. Nadler & Nadler (1989) defined it this way, "HRD is organized learning experience provided by employers within a specified period of time to bring about the possibility of performance improvrement and/or personal growth." Nadler & Nadler (1990) kept their definition almost unchnaged, "HRD is defined as organized learning experiences in a definite time period to increase the possibility of improving job performance growth." Pace, et. al., (1991), define HRD as "the integration of individual development, career development, and organization development roles to achieve maximum productivity, quality, opportunity, and fulfillment for organization members as they work to accomplish the goals of the organization." Marquardt (1993) presents the definition given by the ASTD, "HRD is the integreted use of training and development (planned learning) organization development, and career development to improve individual, group, and organizational effectiveness." All of these definitions have "learning" as a central component. Two of them also have "performance" as a central component. The third one focuses on "accomplishing the organization's goals," which could imply the necessity of both performance or learning, without mentioning either. The fourth one has "planned learning" but does not have

"performance," although it includes effectiveness, which could and most likely does mean the same thing as "performance" in this context.

As time moved on, the HRD Field began to grow and develop. By 1942, the many active local state organizations involved in job related skill development, came together to form the American Society of Ttraining Directors (ASTD -- in its first form) (Nadler & Nadler, 1990). Training and/or learning was the focus of their efforts, and these terms were used interchangeably, with training being the term most often used. Some years later the ASTD changed its name to the American Society for Training and Development, but kept the same acronym. Beginning in 1938 and continuing through 1989, twenty-seven HRD Competency studies were conducted to continue clarifying the competencies necessary for professionals to learn in order to perform the HRD function (Henschke, 1991). ASTD was centrally involved in conducting five of these studies in 1959, 1974, 1978, 1983, and 1989. There was an active University HRD Professors' group, which met annualy in conjunction with the ASTD conference, concerned with the learning aspects of developing competencies. They became involved in the development of the 1989 ASTD competency study. Subsequent to that study being completed, those professors focused their 1990 conference in Orlando, Florida, on developing *The Academic Guide* for using the 1989 competency study in university academic programs. This guide was published by ASTD, and the definition of competency included in it is: Competency is a cluster of knowledges, understandings, skills, attitudes, values, and interests that are necessary for the performance of a function -- in this case it would be the human resource developer function (Henschke,. 1991). Thus, both "learning" and "performance" were included in the definition. This group of professors was the nucleus of the group that in 1993 launched The Academy of Human Resource Development (AHRD).

Taylor & Felton (1993) in their HRD book entitled *Performance by Design* emphasize the centrality of learning in designing performance within sociotechnical systems, underscoring the fact that performance is a dynamic process and not a static one. Thus it may be conjectured that whether one is just entering the HRD Field or is a veteran in it, learning is always a central component (while not the only one) of improving our performance in the work/corporate/organizational context; and one is continuously progressing, improving, and seeking to arrive, but never quite arriving at the finish line, even of performance. Almost without exception, it could be done better.

The gap and separation between performance and learning seems to come into the most pronounced visibility in the Field at the 1995 AHRD Conference in St. Louis, Missouri. At the opening town meeting, Watkins stated the case for learning being the key to HRD, and Swanson stated the case for performance being the key to HRD. One the one hand, the Watkins & Marsick (1995) paper presses for a focus on not only individual learning, but also a focus on a learning organization with the essential elements of: increasing the overall learning threshold; assessing and enhnacing current capacity for learning; creating an ongoing adaptive capacity by embedding systematic linkages between needs, work and rewards; and, building autonomy and empowerment, "space of free movement." On the other hand, the Swanson (1995) paper vies for a focus almost exclusively on performance, with his perspective on learning being only one of the components leading to expertise; expertise being only one of the components of worthy performance on the individual, process, and organizational levels.

At the AHRD Conferences subsequent to that debate by Watkins and Swanson, additional viewpoints have been expressed. Various researchers provide evidence of training (which some may possibly view this term as synonomous with learning -- though others may doubt it) as contributory toward: solving organizational performance problems (Palmer & Crepas, 1998); improving performance in a car rental company (Sleezer, Hixon, Green & Mudgett, 1997), high performnace within an organizational systyem (Bassi & Van Buren, 1997). Training is also mentioned as one of twenty-one ingredients of effective team performance (Struemer, Hendreks & Vermeulen, 1998). Others also assert that there is a close link between learning and performance in HRD. Leimbach & Baldwin (1997) claimed that learning research definitely is one ingredient in performance research within the HRD value chain, but make a weak case by suggesting that very little research has been conducted on learning. Swanson & Arnold (1997) seek to emphasize the importance of adult learning and its relationship to performance, but weaken their argument by diagraming Adult Education (AE) and HRD as being discrete entities within an organizational and environmental context, with AE being in the larger environment but almost totally removed from the organization, and HRD being totally in the organization which is set within the larger environment. Van Zoligen & Nifhof (1998) strongly support the inseparable connection between the process of lifelong learning and performance, expressing the view that the key qualifications for performance are acquired through lifelong learning. Pace, Smith & Mills (1991) use the terms training, development and learning interchangeably to describe a crucial element and tool needed in HRD for integrating individual development (with workers performance of current jobs more effectively), career development (with workers assuming a variety of different jobs in the organizaation), and organization development (with workers moving into jobs yet to be identified and defined), to achieve maximum productivity, quality, opportunity, and fulfillment for organization members as they work to accomplish the goals of the organization.

Holton (1998), in a recent attempt to link learning and performance in HRD, says that performance is a multidimensional and poorly defined construct. Adapting Swanson's (1995) three levels of performance -- organization, process, individual -- Holton (1998) identifies four domains of performance as mission, process, critical performance subsystems, and individual. He makes an attempt at a strong case for adult learning, setting the stage for a closer alliance between performance and learning. He moves forward to craft a definition and connection between the two for the future. With today's changing world of technological innovation, volatile national economies, roller coaster stock markets, the daily birth and death of numerous business organizations, and corporate "right-sizings," lifelong learning appears to be a crucial necessity. More importantly, the need for lifelong learning is especially true for everyone, everywhere if human resources are to perform effectively, now and in the future.

Sources and Roots of Terms

For some of the words which are included for analysis, there are numerous Hebrew and/or Greek words which are equivalent to the English words. For instance, performance has eight equivalent Hebrew words and there are seven in Greek. Learning has seven Hebrew and five Greek equivalent words. Other words would have similar numbers. Hence, to keep this paper from expanding beyond the eight page scope allowed here, only the most appropriate Hebrew and Greek words will be selected for inclusion. Now, to the selected words from Hebrew, Koine Greek, and Webster's original English Dictionary, which include: performance, do, learning, teach, instruct, guide, lead, train, learning organization, hearken wisdom and model. The definition of the term "learning organization" will only be garnered from the HRD literature since it has no antecedents as a term combined of two other words.

Performance

The Hebrew word is "asah." This root means to do a work, labor, toil, make, create, construct, build, accomplish, earn, procure, prepare, sacrifice. It has the connotation of ethical obligation. I deals with refinements fashioning the object created. Another Hebrew word is "pala." This means remarkable, surpassing, extraordinary, distinguished, and singular in causing wonderful things to happen. A final Hebrew word is "shalam." The principal meaning is completion, fulfillment, wholeness in which relationships are restored. (Brown, et. al., 1979; Zodhiates, 1984, 1990). The Greek word is "poieo." The word means quality, to make, to endow a person with a certain quality. It is fashioning and bringing forth something which, when produced has an independent existence of its own. Another Greek word is "teleo." It means to bring anything to perfection or to its destined goal, to carry it through. (Thayer, 1979, 1981; Zodhiates, 1984, 1990). The English word "performance" means execution, completion, fulfillment, or carrying out of any work or undertaking (Webster, 1828; Russell, et. al., 1939).

Do

The Hebrew word is "hayah." It means to come to pass, to be done, to turn out, to happen, to be finished in a dynamic sense, not a static one (Brown, et. al., 1979; Zodhiates, 1984, 1990). The Greek word is "energeo." It means to be active and energetic, to effect, prove oneself strong (Thayer, 1979, 1981; Zodhiates, 1984, 1990). The English word "do" means to perform, to execute, to carry into effect, to exert labor or power upon, to bring anything to the state desired or to completion, to bring to pass (Webster, 1828; Russell, et. al., 1939).

Learning

The Hebrew word is "lamadh." It has the idea of learning, studying, becoming accustomed to, exercised in, instructing, training, educating, practicing, being taught and trained. This one Hebrew word had wrapped up in it what it took two Greek words to express: "manthang," to learn, and "didasko," to teach. Another Hebrew word is "alaph," which means being accustomed to something or having close association with an object; hence, the idea of learning from association. A final Hebrew word is "leqach," which has the meaning of persuasiveness in a good sense (Zodhiates, 1984, 1990; Brown, et. al., 1979). The Greek word is "manthano," meaning to endeavor, desire, seek to learn, experience, or bring to experience. Another Greek word is "gramma," meaning learning and knowledge gained from books and writings (Thayer, 1979, 1981; Zodhiates, 1984, 1990). The English word "learning," means to acquire knowledge of something before unknown; in popular use, learn has both senses to teach and to learn (Webster, 1828); to acquire information concerning, by instruction, by study, by observation, by experience, or in any other way; formerly, it meant to teach--but this use is now obselete among careful writers and speakers (Russell, et. al., 1939. In one HRD definition, "learning is a shift of mind, and is what goes on inside learners as they undertake to gain or acquire new knowledge, understanding, skill, attitudes, values, and interests."

The "what goes on" could be described as: perceiving--sensing and feeling concrete reality, thinking or reasoning abstractly; and internalizing or processing-- making it a part of oneself by actively jumping in and trying it, or reflecting on and watching what's happening, so the HRD professional, whom it would be safe to assume is an adult learner, would have going on inside of her/him the perceiving and internalizing of new knowledges, understandings, skills, attitudes, values, and interests (Henschke, 1995).

Teach

The Hebrew word is "yarah." It has the idea of shooting arrows, pouring rain, casting, laying a foundation, erecting, establishing, irrigating and giving water, putting out words, the connotation of aiming for something (Brown, et. al., 1979; Zodhiates, 1984, 1990). The Greek word is "didasko," having inherent in it the calculation of the increase of understanding of the pupil (Gthayer, 1979, 1981; Zodhiates, 1984, 1990). The English word "teach," means to communicate to another the knowledge of that of which he was before ignorant (Webster, 1828; Russell, et. al., 1939).

Instruct

The Hebrew word is "sakhal," with the idea of showing oneself attentive to, understand, consider, circumspect, desirable to look upon, cause to make wise, to have intellectual comprehension, insight, expertise and skill, knowing the reason for something (Brown, et. al., 1979; Zodhiates, 1984, 1990). The Greek word "matheteuo," means not only to learn but to become attached to ones teacher and to become his follower (a disciple) in teaching and conduct (Thayer, 1979, 1981; Zodhiates, 1984, 1990). The English word "instruct," is to inform the mind, to impart knowledge to one who is destitute of it (Webster, 1828; Russell, et. al., 1939).

Guide

The Hebrew word is "yaats." It has the idea of counseling together, consulting with one another, to devise, decide, plan, propose, and advise, to exchange counsel as a king with his advisors (Brown, et. al., 1979; Zodhiates, 1984, 1990). The Greek word "kateuthuno," means to make straight, direct, remove the hindrances to coming to one (Thayer, 1979, 1981; Zodhiates, 1984, 1990). The English word "guide," means one who leads another in his way or course, who goes before or accompanies to point out the way (Webster, 1828; Russell, et. al., 1939).

Lead

The Hebrew word is "nachah." It has the notion of guiding, going in the direction of, turning eyes toward, bringing, just as the pillars of cloud and fire indicated the way to go for the Children of Israel, treating kindly, moving on a path to benefit (Brown, et. al., 1979; Zodhiates, 1984, 1990). The Greek word is "ago," meaning to bring, carry, to bring gently and without violence (Thayer, 1979, 1981; Zodhiates, 1984, 1990). The english word "lead," often includes the sense of drawing as well as directing (Webster, 1828; Russell, et. al., 1939).

Train

The Hebrew word is "chanakh," meaning to initiate, to dedicate, consecrate, to inaugurate (Brown, et. al., 1979; Zodhiates, 1984, 1990). There is no Koine Greek word for "train." The English word "train, is to draw along from act to act by persuasion or promise, with discipline, exercise, and formed by practice (Webster, 1828; Russell, et. al., 1939).

Learning Organization

The HRD literature defines this as "one that learns continuously and transforms itself. This means learning: takes place in individuals, teams, organizations and society; is a continuous, strategically used process--integrated with, and running parallel to, work; results in changes in knowledge, beliefs, and behaviors; enhances organizational capacity for innovation and growth; and has embedded systems to capture and share the learning" (Henschke, 1995).

Hearken

The Hebrew word is "shama," meaning to hear with undivided listening attention and obedience (Brown, et. al., 1979; Zodhiates, 1984, 1990). The Greek word is "adouo," meaning to hear with the ear of the mind effectually, or so as to perform or grant what is spoken (Theyer, 1979, 1981; Zodhiates, 1984, 1990). The English word "hearken," is to attend to what is uttered, as to words of advise or admonition (Webster, 1828; Russell, et. al., 1939).

Wisdom

The Hebrew word is "chokhmah." It is intelligence, experience, insight, prudence and judgment in a positive sense (Brown, et. al., 1979). The Greek word is "sophia." It means one knows how to regulate ones relationship to goodness and circumstances (Thayer, 1979, 1981; Zodhiates, 1984, 1990). The English word "wisdom," means the right use or exercise of knowledge; the choice of laudable ends, and of the best means to accomplish them (Webster, 1828; Russell, et. al., 1939).

Example/Way/Model

The Hebrew word is "derekh." It means a going, way, journey, walk, road, manner, path, way of life. It refers to the actions and behavior of humans. The word is used to denote some wonderful things which leave no trace that is externally visible to the physical eye, but are as they are because of their nature. The wonderful things are: the way of an eagle in the air, the way of a serpent upon a rock, the way of a ship in the heart of the sea, and the way of a man with a maid. Looking to the heavens, one cannot say that an eagle has passed there. Looking to the rock, one cannot say that a serpent has wound its way around it. Looking to the high sea, one cannot say that a ship has been steered through it. Looking to the maid, one cannot say that a man has had sexual intercourse with her (Brown, et. al., 1979; Zodhiates, 1984, 1990). The Greek word "tupos," carries with it the idea of a constitutent element of a model of some current reality, or that which is yet to be developed, a pattern to be imitated or copied (Thayer, 1979, 1981; Zodhiates, 1984, 1990). The English work "example," means pattern, a copy, a model, a way of very comprehensive signification, which is proposed or proper to be imitated (Webster, 1828; Russell, et. al., 1939). In one HRD definition it means "walking the talk," not a mentality of "do as I say, not as I do," but with the notion that " if we model the thing we are talking about, we will get it right yet" (Henschke, 1998b).

Results, Conclusions, and Limitations

On the one hand, as one looks at the words presented, the first two words -- performance and do -- are synonyms. In HRD, they carry the importance of accomplishing the things crucial to the organization levels of organization, process, and individual; and the organization outcomes and drivers performance domains within the mission, process, critical performance systems, and individual. However, it seems that one does not become able to perform at any level of competence or within any context without some process of learning taking place to prepare the person for performing within the organization's levels and domains to accomplish the organizations goals, and even the mechanical aspects of the organization to perform.

On the other hand, the subsequent ten words -- learning, teach, instruct, guide, lead, train, learning organization, hearken, wisdon, and model -- have somewhat synonymous definitions. In HRD, they carry their meaning not in a vacuum, but only in relationship to preparing people through learning processes, as well as the mechanical aspects (which are also implemented by people), to learn, not for their own individual purposes, but to learn in order to perform the purposes of the organization. It seems that the two groups of terms, although separate and distinct, in the HRD context they are both key ingredients.

Moreover, the English word combination -- example/way/model -- which is encompassed in the Hebrew word "derekh," and the Greek word "tupos," offer an additional insight into the nature of the four wonderful things which are reflected in the use of the Hebrew word. It appears that "learning" and "performance" in this setting are two sides of the same coin. It is the worthy performance of the eagle to fly in the air, but it does not come by that automatically; and the young eagle needs to learn to fly and to be taught by parent or more experienced eagles to fly, which is the nature of eagles. It is the worthy performance of the serpent to wind its way around a rock, but it does not come by that automatically; and the young serpent needs to learn to wind and to be taught by parent or more experienced serpents to wind, which is the nature of serpents. It is the worthy performance of a ship to pass through the sea, and it does not do that automatically; but comes by that when it has a rudder giving it direction and a captain who has learned and been taught by veteran captains what one does to guide a ship successfully through the heart of the sea. Finally, it is the worthy performance/way of a man with a maid to have sexual intercourse with her, and he does not come by that automatically; but he must grow mature enough biologically, and learn and be taught by parents, others more experienced, written materials and/or trial and error to accomplish that sucessfully.

Consequently, it seems that we can conclude that the terms "performance" and "learning" and the related terms from Hebrew, Koine Greek, English, and HRD sources are all mixed together in this comprehensive term -- example/way/model. This term has a much broader definition and meaning that any one of the terms separately, and may give coherence to the overall importance of both ingredients, performance and learning, as being key ingredients within HRD.

One limitation of research into this area is that it has practical validity only for those who acknowledge that word definitions and meanings, from both ancient and modern sources, are important sources of data for shaping the HRD Field, and helpful in sculpting its future course of action in accomplishing the purpose of HRD within organizations. Another limitation is that the value of this research will partially be determined by the extent to which further studies in the future are conducted in this area of inquiry.

How This Research Contributes to New Knowledge in HRD

This research contributes to insight that "performance" and "learning" are not mutually exclusive terms as had been implied or espoused in some of the literature cited within this paper, and some quarters of the HRD Field and the AHRD. This research further contributes the idea that the two terms are both complementary parts of a comprehensive whole perspective which gives direction to and drives the HRD Field. In addition, this research could provide for the HRD Field a much richer, fuller, and deeper understanding of the meaning and importance of HRD as a worthwhile scientific endeavor. Finally, those who have found themselves on either side of this discussion up until now, may be able to join forces and unite their energies in a new way for collaborative efforts to mutually benefit the AHRD, the HRD Field and the constituencies served by HRD.

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Developing Managerial Competence: Does It Improve Performance?

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The level of training and qualification of UK managers lags that of competitor nations,so it is important to focus management training and development where it will be most effective. This study found evidence that management development improved performance at the level of individuals and businesses. Moreover, development was shown to be more effective when linked to organizational strategy and when based on the occupational standards for managers established by the Management Charter Initiative.

Keywords: Management Development, Competence, Performance

It is a recurrent theme that UK managers are inadequately trained and qualified in comparison with those of competitor nations. As post-war demand for trained managers increased (Clements, 1958: 158), British industry was seen to be handicapped by a shortage of suitably qualified managers (McGivering, Matthews and Scott, 1960: 79). The general lack of qualifications among senior managers in the UK has been repeatedly noted over the years (Legatt, 1972; CBI, 1989). In 1987 two reports were produced as part of a review of management education and training, prompted by the recognition that the UK lagged behind other industrialised nations in terms of its formal management education, and the belief that developing managers would improve the competitive advantage of UK industries (Handy et al., 1987; Constable and McCormick, 1987).

An increase in the amount of management development (MD) is widely viewed as neccesary to remedy these deficiencies and has been linked with the attainment of competitive advantage in recent public policy documents. The Cannon and Taylor Working Party Reports (IoM, 1994) arising out of the 1992 Institute of Management review of MD, confirmed the need for the effective development of existing managers in order to raise the competitiveness of British industry. These reports noted that the challenges of organizational changes, especially contracting out, de-layering and empowerment, make the need for MD particularly acute. The situation was seen to be exacerbated by persistent structural unemployment, competitive pressures from low-wage economies, rapid technological change and standards in education which are inappropriate to the needs of employers. The recognition in European Commission White Papers (1994) that skills must be raised at all levels if European enterprises are to compete in global markets, re-surfaced in successive Competitiveness White Papers in the UK (DTI, 1994; 1995).

Following the adoption of a competence-based approach to vocational education and training, the Management Charter Initiative (MCI) developed Occupational Standards describing the competences which managers need. With renewed concern over developing the UK managerial workforce, the Employment Department (now the Department for Education and Employment, DfEE) decided to appraise the use of the Management Standards developed by MCI. The study subsequently undertaken on behalf of the DfEE, investigated the business benefits that could be attributed to competence-based management development (CBMD) in a range of organizations. The research addressed five hypotheses:

- CBMD improves individual performance (IP)
- CBMD improves organizational performance (OP)
- CBMD improves business performance (BP)
- improvements in IP, OP and BP are more likely if CBMD is linked to organizational strategy (OS)
- improvements in IP, OP and BP are more likely if HRD processes are based on a common, coherent integrated set of competence statements (i.e. the MCI Standards).

This paper reporting on the study is organized into three sections dealing with, respectively, the methodological approach, the empirical evidence relating to the hypotheses outlined above and the overall conclusions and policy implications of the findings.

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Methodology

Despite an established literature supporting the crucial role of HR in improving organizational performance and sustaining competitive advantage (Arthur, 1994; Carter and Lumsden, 1988; Coopers and Lybrand, 1992; Cutcher-Gershenfeld, 1991; Downham, Noel and Prendergast, 1992; Huselid, 1995; MacDuffie, 1995), there is a paucity of robust evidence capable of building a 'cumulative body of knowledge' (Becker and Gerhart, 1996: 790). In the absence of a common, coherent conceptual framework, there is little scope for comparison between the different studies until theory has been advanced by developing 'specific, testable propositions' (Becker and Gerhart, 1996: 791) and elaborating 'more complete structural models' (p.793). Given the 'causal ambiguity' concerning the mechanisms by which HR practices translate into improved business performance (Barney, 1991), more rigorous methods of analysis are also required, with studies reporting regression coefficients reflecting 'the *magnitude* of the effect of HR on organizational performance' (Becker and Gerhart, 1996: 791).

In practice, however, there are difficulties in measuring the effects of developing people (Harrison, 1993), and the reported benefits of MD are often anecdotal and confined to a single aspect of performance. The literature (see summary in Winterton and Winterton, 1997) nevertheless provides some indication of the nature of benefits which are anticipated from MD in relation to each of the hypotheses outlined above. In the case of individual performance, the literature demonstrates above all else the difficulties of measurement and attribution associated with identifying performance improvements arising from MD. In relation to organizational performance, the key message is the importance of developing collective knowledge so that organizational capacity is not adversely affected by individuals moving jobs (Brooks, 1994). With business performance, much of the literature links the achievement of critical success factors to the management capability of organizations (Berry, 1990). There is much emphasis on the need to link MD with organizational strategy (Taylor and Thackwray, 1995) and that the benefits to the organization should be identifiable (Mitrani, Dalziel and Fitt, 1992). Finally, recent literature contains claims that MD is more effective where HRD systems and procedures have adopted the MCI Standards (King, 1993).

Case Study Design and Fieldwork

Methodological difficulty is undoubtedly a major reason why systematic investigation of the effect of MD on performance is rarely attempted. In recognition of these difficulties, the Employment Department established an expert study group in advance of commissioning the research to identify an appropriate methodology for tracing and measuring the business impact of CBMD (Leman et al, 1994). The study group considered a variety of methodologies and recommended an embedded, multiple-case study approach to investigate the impact of CBMD and the adoption of the Management Standards. The study group offered a tentative case study design including the data collection protocol that specified the written evidence required and recommended detailed interviews with key respondents in each organization.

The initial case study protocol from the study group report was operationalised, piloted and refined by the authors once the research was commissioned. The protocol defined the written evidence which was to be examined in relation to each hypothesis, the range of measures of performance to be considered and the interview schedules which were to be used for in-depth, semi-structured interviews with senior strategic managers (chief executive, finance director and head of human resources), line managers and junior managers. The protocol is contained in the official report of the study (Winterton and Winterton, 1996).

In order adequately to test the conditional hypotheses, it was necessary to include organizations that did not use the Management Standards as well as users, and to include organizations in which MD was not linked with OS as well as those where there was a clear link. For each of the four categories so defined, the objective was to identify five organizations suitable for case study. Information had to be gathered from potential case organizations *before* any fieldwork took place in order tentatively to allocate them to one of the four categories. Contenders for study were identified from discussions with MCI, the DfEE steering group, and from previous research. The organizations were to be drawn from a range of different economic sectors, and it was intended that one third of the organizations studied should be SMEs (fewer than 200 employees).

The MCI supplied details of 25 organizations known to have adopted the Management Standards and a second tranche of 18 organizations, known to practise CBMD but not thought to be users of the occupational standards, was also identified. Each organization was approached by the DfEE and the researchers by mail initially and then by telephone and meetings were held with senior management to negotiate access. Difficulties in achieving access, particularly to SMEs, made it necessary to approach further organizations and out of a total of 126 organizations approached, 16 cases were selected for detailed study from those that agreed to collaborate. The cases were slightly

biased in favour of users of the Management Standards, and in favour of those claiming that MD was closely linked with OS.

As a minimum in each case, face-to-face interviews were conducted with the three senior strategic managers, four line managers and four team members. Multiple sources of evidence were collected to increase the reliability of data through triangulation and interlocking questions in the interview schedules were designed to test for consistency between the views of managers at different levels. Details of improvements in performance and of HRD systems and processes were collected through an extensive range of written evidence. Managers' job specifications gave an indication of the extent to which responsibility for MD was a feature of their role, while company accounts were examined as evidence of improvements in BP.

Evaluation and Ranking of Case Reports

A dossier was compiled of written evidence and interviews for each organization studied, and a case report was written in accordance with the protocol. The case reports provided background details of the organization, details of the organizational strategy, the HRD systems and processes, and the evidence of the improvements in IP, OP and BP which were attributed to MD by respondents. The case reports were validated with two senior managers in the organization and revised before being evaluated and used in the cross case analysis.

To test the five hypotheses, a team of independent experts was asked to rank the cases according to the extent of improvements in IP, OP and BP attributable to MD, the degree to which MD was linked to OS and the extent to which the Management Standards had been adopted in HRD systems and processes, against the criteria outlined in the report of the study group. The evaluation was co-ordinated by an expert on the Management Standards who had participated in the original study group but had not been involved in the case studies; she was therefore familair with the protocol but was not biased by knowledge of particular cases.

The rank order of the cases according to the three performance measures and the two defining characteristics was used to structure the cross-case analysis. The rankings made it possible to test for any correlation between the defining characteristics and performance improvements measured at the three levels, as well as correlation and concordance between the three performance measures themselves. In addition to the case study evidence, therefore, the hypotheses were examined using robust non-parametric techniques. The results of the statistical tests are reported in the concluding section.

Empirical evidence

The dossiers for each case study were too extensive to be included in the official report of the research (Winterton and Winterton, 1996) although abbreviated case reports are included in the extended account of the study (Winterton and Winterton, 1999). A selection of the evidence is considered below in relation to the hypotheses outlined in the introduction.

Individual Performance

In the cases demonstrating the most robust evidence of improvements in IP, the central importance of MD was demonstrated through written evidence and corroborated interviews. The improvements included increased personal confidence, awareness of potential and continuous development of general managerial skills and competences. Managers reported having a better understanding of both organizational objectives and their individual responsibilities. A range of efficiency gains were attributed to MD, such as better planning and time management, more effectiveness in running meetings, and improvements in project management, change management and problem solving. Increased competence in managing people was also cited, especially through raising skills in communications, presentation, leadership and motivation. Middle management mentioned empowerment, faster individual career advancement and a more methodical approach to developing others.

Improvements in IP were clearly associated with the use of the Management Standards and the implementation of NVQs, which provided criteria for performance, facilitated best practice benchmarking and promoted new ways of conceptualising work tasks. With the Standards, individuals take responsibility for, and can track, their own development, and this is associated with increased commitment and motivation.

In the organizations which provided less robust evidence that IP had improved, there were nonetheless examples of specific changes in IP arising out of MD activities. In other organizations, isolated examples of IP gains were cited, but these were more a consequence of ad hoc initiatives than the result of operating a coherent MD

framework. Towards the lower end of the ranking, there was ambiguity in relation to reported improvements in IP, difficulties of measurement and of attributing improvements to MD. In particular, there were difficulties in separating IP from OP measures, and systematic measurement and evaluation was thought to be too costly. It was also noted that the outcomes of development vary between individuals and that the effects are difficult to isolate when other major changes are taking place.

Organizational Performance

Where there was most evidence of improvements in OP attributed to MD, these typically related to process issues such as quality of service, better focus on customer needs, reduced queues, better telephone standards and improved customer relations. Managers in some organizations cited evidence of more strategic behaviour and identified better procedures and monitoring of actions. Cost reductions, efficiency gains and more effective debt control were also reported. Other examples of improved OP arising from MD included improved procedures for controlling and handling materials as well as the identification of potential areas for improvement in the future such as new information systems.

Improvements in OP attributed to MD initiatives designed to promote team working included greater flexibility, awareness of team responsibilities and more effective team working. Both inter-personal and inter-departmental relations improved as a result of better communications, and individuals were also said to demonstrate increased commitment and motivation. In one case, managers identified improved team performance, such as more 'flexibility and commitment', as a result of MD introduced to support business process re-engineering. In another case, improvements in OP as a result of MD initiatives were visible in the changes in team behaviour, including performance and the dynamics of work groups.

Major difficulties of measurement of OP and of attributing improvements to MD were encountered, especially where the same measures were used for OP and IP, and where OP was regarded as a function of a manager's performance. Equally, OP was difficult to separate from BP and was seen to be affected by extraneous factors.

Business Performance

The organizations which were ranked highest displayed quantified, written and corroborated evidence of improvements in BP, and respondents were unequivocal that MD had contributed to all prime measures of business efficiency. In such organizations, managers emphasised increased turnover and profit, sales and revenue growth, increased market share and competitiveness. Productivity, efficiency and quality gains were important factors, as was decreased unit costs. Other benefits reported were reductions in arrears and stock holding, shorter waiting times and queues, and reduced staff turnover.

In cases which were ranked lower than the best, evidence was provided of specific business benefits, which were largely attributable to MD activities. Where improvements in BP were identified, the extent to which these were attributed to MD initiatives varied from the unequivocal cases where they would have been impossible without MD, to cases where the contribution of MD was implicit. Other cases showed how MD was the major, but not the only, contribution to success, or how MD was a necessary factor, in conjunction with other changes.

Problems of measurement of BP were most serious in the weaker cases, and largely arose from the interaction of other factors affecting BP, while difficulties of attribution were a consequence of being unable to produce counter-factual evidence of what would have been the BP outcome in the absence of MD initiatives. In cases where improvements could not be attributed unambiguously to MD, few attempts had been made to measure its impact.

Organizational Strategy

In the cases where written evidence and corroborated interviews showed how OS and MD were inter-related, the links between the two were pervasive and demonstrated in a variety of ways. Typically, MD was shown to be an intrinsic part of the business plan, and to support strategic priorities. Business objectives were shown to be linked to OS through defined competences, strategic objectives were mapped onto performance standards, and personal development plans related to business plans. Roles and responsibilities for MD were devolved to individuals and their line managers, with only limited HR intervention, thereby embedding MD within OS.

Major changes provided both the opportunity and necessity of linking MD to OS, and MD initiatives responded to changes in the organization's environment. Extensive restructuring or business process re-engineering (BPR) provided opportunities for linking MD to OS and focused attention on the competences required to achieve the

organizational transformation. Throughout, the MCI Standards and NVQs were seen to provide a structure for the links.

Even where the links between MD and OS were less clear, there was some evidence of MD initiatives to support specific aspects of OS. In other cases, problems were identified in establishing the link, for example difficulty in identifying which competences would improve BP. Also, MD was found invariably to lag OS where this was dynamic, and immediate priorities inevitably took precedence over longer-term strategic MD. An apparent paradox was also highlighted between devolving responsibility for MD and linking it to OS, since much MD is focused on the needs of the individual, not the organization.

HRD Systems and Processes

In four organizations, the Management Standards were comprehensively adopted in HRD systems and processes. In these organizations, all or most MD activities were competence-based. The Management Standards were central to appraisal, training and development, although they were used less extensively in job descriptions, recruitment and remuneration.

Written evidence and corroborated interviews demonstrated the ways in which the Standards were adopted and the benefits of building MD initiatives around the MCI Framework. The major benefit identified from adopting the Management Standards was the coherent structure which they provided for training, MD and personal development. Gaps in competence, for example, are more readily identified through appraisal, training and development needs are specified more precisely in relation to the competences required for individuals to meet the needs of the organization, and there are clear criteria for human resource planning and career succession. In addition, MD is linked to a qualifications framework.

In three cases, the Management Standards had been partially adopted, and were used to a limited extent in some HRD systems and processes. The remaining nine organizations had either not attempted to adopt the Management Standards or had only made limited progress in this direction, so that they were regarded as non-users. The research identified some limitations to the adoption of the Management Standards both in the extent to which they have percolated through an organization and in the range of HRD systems and processes involved. The main limitations were that the Standards are not extensively used in recruitment and selection, other than in relation to job profiles, and reward and remuneration systems are rarely linked to the achievement of competences defined in the Standards. Additional criteria are sometimes used alongside the Standards, especially in relation to specific technical competences, and familiarity with the Management Standards is less extensive outside the HR specialists.

Conclusions

The sixteen organizations provided very positive and highly significant results demonstrating performance improvements as a result of MD. Despite the difficulty of measuring performance, and especially OP, the three measures of performance are significantly correlated. The overall coefficient of concordance between the rank orders of IP, OP and BP is significant at the 1 per cent level (Kendall's $w = 0.796$), showing that the rank position of an organization in terms of one performance measure is similar to its rank position for another performance measure. Moreover, as Table 1 shows, each pair of performance measures correlates at the 5 per cent level or better, especially in the case of IP and BP (Spearman $R_S = 0.797$). Of the three performance measures, OP was the most problematic, but the significant rank correlation coefficients suggest that OP can be 'captured' adequately by IP and BP measures.

Significantly, the results of the rank correlation also provide support for the conditional hypothesis that MD is more likely to improve performance when it is linked with OS. The Spearman rank correlation coefficients between OS and both IP and BP are significant at the 1 per cent level. Paradoxically, there is no significant correlation between OS and OP, which may reflect the difficulties of measurement and attribution already identified. In the case of IP and BP, these results offer unambiguous support for the importance of linking MD to OS in order to realise business benefits.

The rank correlations also provide support for the conditional hypothesis that MD is more likely to improve performance when HRD systems and processes are based on the competence statements in the MCI Standards. The Spearman rank correlation coefficients between HRD and both IP and BP are significant at the 5 per cent level, although again there is no significant correlation between HRD and OP. In the case of IP and BP, these results again offer support for the importance of developing MD around the Management Standards in order to realise business benefits.

Table1

Spearman rank correlation coefficients

factor	OP	BP	OS	HRD
IP	0.635	*0.797*	*0.863*	0.611
OP		*0.650*	(0.411)	(0.170)
BP			*0.658*	0.548
OS				0.575

Key:
IP = rank in terms of evidence of individual performance improvements attributed to MD
OP = rank in terms of evidence of organizational performance improvements attributed to MD
BP = rank in terms of evidence of business performance improvements attributed to MD
OS = rank in terms of evidence of link between organizational strategy and MD
HRD = rank in terms of evidence that HRD systems and processes are based on the Management Standards.
Statistical note:
For 14 degrees of freedom, $R_S\ (0.01) = 0.645$; $R_S\ (0.05) = 0.456$
In the table, ***correlation coefficients in italics are significant at 1 per cent***, others are significant at 5 per cent, (results in brackets are not significant at the 5 per cent level).

Three policy implications follow from the above conclusions, relating to the performance measures which should be used to monitor the business benefits of CBMD, linking CBMD to organizational strategy, and adopting the Management Standards.

First, the performance measures which are most reliable for monitoring the business benefits of CBMD are individual and business performance, which correlate with, and therefore probably also incorporate, the less tangible organizational performance measures. The strength of the link between CBMD and both individual and business performance suggests that CBMD should be promoted with the message that *developing people contributes to business success*.

Second, performance benefits are more likely to arise from CBMD where this is strongly linked with organizational strategy. The link between CBMD and organizational strategy should be seen as complementary to the value of developing people since this is the mechanism through which the development of individuals contributes to business performance. In policy terms, these findings provide further support for the *Investors in People* approach, through which development is linked to business strategy.

Third, performance is improved additionally where organizations adopt the Management Standards as a framework for development within HRD systems and processes. The additionality is important and provides support for further promoting the *MCI Standards*, encouraging their adoption by organizations to provide coherence in CBMD and to support mobility within the managerial work force.

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